

CLAIMS

Please amend the claims as indicated below:

Claim 31 (amended twice): A calcining [calcination] plant for particulate material comprising:

a calcining reactor having a calcining [means defining a calcination zone, said defining means including a peripheral wall which peripherally surrounds said calcination] zone;

a burner arranged to produce a flame within a region internally of said calcining reactor,
said burner being designed to generate hot combustion gases and [means for generating] a
calcining [calcination] temperature of at least 1700°F in said [calcination zone] calcining reactor;
and

means for [transporting] producing a swirling flow of particulate material [through at
least part of said calcination zone along a substantially cyclonic flow path] around said region
and a gradual blending of the particulate material with the hot combustion gases, said [peripheral
wall] calcining reactor being [substantially free from refractory insulation] uninsulated internally
thereof along said [part of said calcination] calcining zone.

Claim 32 (amended): The plant of claim 31, further comprising means for adjusting the
temperature in said [calcination zone] calcining reactor by varying the rate of admission of
particulate material into said [calcination zone] calcining reactor.

Claim 33 (canceled)

Claim 34 (amended): The plant of claim 31, wherein said [transporting] producing means comprises means for introducing particulate material into said [calcination zone] calcining reactor substantially tangentially of said [calcination zone] calcining reactor.

Claim 35 (canceled)

Claim 36 (canceled)

STATUS OF CLAIMS AND SUPPORT FOR CLAIM CHANGES

Claims 1-19 of Patent No. 5,975,852 have been canceled as have the added claims 20-30, 33, 35 and 36. The remaining added claims 31, 32 and 34 are pending.

The currently amended claims recite a calcining reactor. This is supported by the following disclosure in column 5, lines 51-53 of Patent No. 5,975,852:

“The calcination products exit the vertical calcining reactor 14 and travel through the high temperature cyclone 20, which is located parallel to the calcining pipe.”

The currently amended claims further recite that the calcining reactor has a calcining zone. This is supported by the following disclosure in column 5, lines 10-16 of Patent No. 5,975,852:

“As mentioned above, the feed material is discharged from the silo’s storage compartment into the feed pipe 44 through rotary valves 30 and pneumatically conveyed tangentially into the calcining zone of the reactor 14, thus producing a cyclonic action that characterizes the flow of the fluidized reactants during calcination”.

The currently amended claims additionally recite a burner arranged to produce a flame within a region internally of the calcining reactor. This is supported by column 3, lines 45-46 of Patent No. 5,975,852:

“The burner 36 is mounted vertically in the calcining pipe to create an upward flame within the cyclonic feed region.”

The currently amended claims also recite the production of a swirling flow of particulate material around the flame region. This is supported by column 2, lines 29-31 of Patent No. 5,975,852:

“The feed pipe is connected tangentially to the reactor so as to produce an upward swirling flow around the burner’s flame.”

The currently amended claims further recite that the burner is designed to generate hot combustion gases and that a gradual blending of the particulate material with the hot combustion gases takes place. This is supported by column 5, lines 23-25 of Patent No. 5,975,852:

“The tangential flow of the feed into the calcining pipe provides the gradual blending of the feed material with the hot combustion gases, which results in avoidance of sintering of the feed material.”

The currently amended claims additionally recite that the calcining reactor is uninsulated internally thereof along the calcining zone. This is supported by column 6, lines 12-13 of Patent No. 5,975,852:

“This arrangement also avoids the need for expensive refractory material to insulate the equipment.”